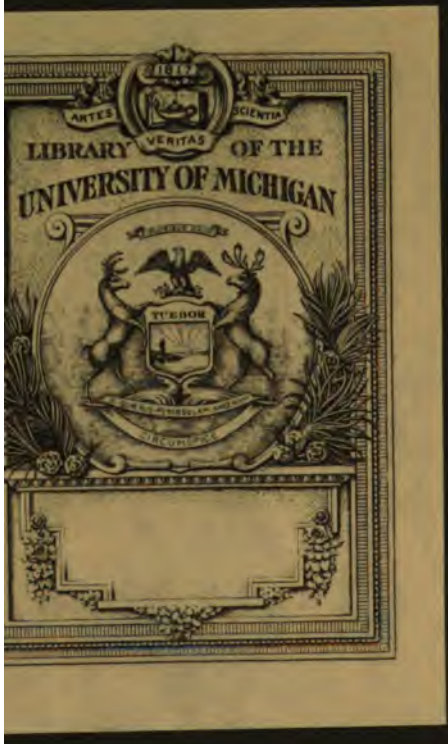

ARTES
VERITAS
SCIENTIA
LIBRARY OF THE
UNIVERSITY OF MICHIGAN
TUEBOR

THE IMPROVEMENT

OF THE

CHARLES RIVER BASIN.

A BRIEF CONSIDERATION OF THE ARGUMENTS FOR AND AGAINST THE ESTABLISHMENT OF A WATER PARK NEAR THE CENTRE OF METROPOLITAN BOSTON.

BOSTON:
WRIGHT & POTTER PRINTING COMPANY,
18 POST OFFICE SQUARE.
1901.

THE IMPROVEMENT

OF THE

CHARLES RIVER BASIN.

A BRIEF CONSIDERATION OF THE ARGUMENTS FOR AND AGAINST THE ESTABLISHMENT OF A WATER PARK NEAR THE CENTRE OF METROPOLITAN BOSTON.

BOSTON:
WRIGHT & POTTER PRINTING COMPANY,
18 POST OFFICE SQUARE.
1901.

THE IMPROVEMENT OF THE CHARLES RIVER BASIN.

DEAR SIR: — We believe it cannot be disputed, by any person who has carefully investigated the subject, that in the lower Charles River basin the city of Boston has an opportunity to create one of the most beautiful water parks in the world. In no other way can the city add so much to its attractiveness as a place of residence and to its general beauty and dignity as by the proper treatment of this basin; and in no other way, by the expenditure of even ten times the amount here involved, can the city obtain an open-air playground, which, in area, or in freedom from city dust and noise, or in proximity to the heart of the metropolitan centre, can compare with the opportunity afforded by the Charles River basin.

During the winter the small space supposed to be set apart as a boys' playground on the Boston Common is the dumping ground for the polluted snow and filth of the city streets. During the spring months this playground is occupied by "Keep off the Grass" signs. During the summer an opportunity is offered for perhaps one hundred or one hundred and fifty boys to play base ball. Essentially, however, the Common cannot be considered to supply a playground which maintains any relation to the needs of a great city. The Public Garden, which bears at the gate the sign "No Dogs Admitted," might as well bear the sign "No Boys Admitted," so far as it affords an opportunity for the play of an active, energetic boy. The garden is, of course, of value as a breathing place for children in baby carriages or led by nurses; and the pond, with its stone curb always

directly in front, whichever way you try to row, may possibly do for a low-spirited boy of ten; but for an active, energetic lad of more than ten it presents no attractions.

Some eighteen American cities now make special provision for boating and sailing, and fourteen for skating, in their park systems. Boston has done a good deal in the latter way at Jamaica Pond and elsewhere, but has provided nothing so available for such a large population as the proposed park would afford. The eighth ward (bordering on this basin) is the densest in population of any in the city.

It is true that the Charlesbank gymnasium is of great benefit, but it is at best of limited area, and certainly does not constitute a sufficient reason for declining to take advantage of the great opportunity offered by the Charles River basin; nor do the playgrounds in other distant sections of the city, as at Franklin Field, Wood Island Park or North End Beach, afford such reason.

We give here (facing page 4) a view of the Thames, near London, showing the way in which that river has been utilized as a place for outing and recreation by the city population. Any Saturday afternoon or holiday, all summer long, thousands and thousands of pleasure seekers exchange the hot and noisome streets of London for the refreshing voyage afforded by the Thames, with its perfect system of locks and basins.

We also give (facing page 6) a view of the upper Alster basin, showing the good derived from the intelligent handling of an even more unpromising situation by the great city of Hamburg.

That the citizens of Boston are throwing away an opportunity for adding tremendously to the beauty of their native city is rendered clear by the Hamburg method of treating precisely the same problem. What has been done at Hamburg is indicated by the next cut (facing page 8). The condition in which Boston has permitted her water way to remain, although in many respects it has even greater possibilities than the Alster basin, is shown by the next photo-

A SCENE ON THE THAMES, NEAR LONDON.

graph (facing page 8), taken of the river bank in the rear of Beacon Street. It is clear that, so long as the river is during nearly half the time confined to a narrow, tortuous channel, fringed with uncovered and unsightly mud flats, or else by flats only slightly covered with water, upon which any party of pleasure seekers are likely to be caught and stranded by the retreating tide, it cannot be a place of general public resort. It is also true that the present comparatively strong currents in the river entirely unfit the basin for the sort of recreation typified by the pictures of the Thames and Alster (shown facing pages 4 and 6.)

Is there any reason of health or expediency why Boston should continue to waste such a fine opportunity as here exists?

This matter was first seriously investigated in 1894 by the State Board of Health and the Metropolitan Park Commissioners, sitting as a joint Board, with Dr. Henry P. Walcott as chairman. This Board had among its members, besides Dr. Walcott, Dr. Frank W. Draper, and also the noted hydraulic engineer, Mr. Hiram F. Mills. It also employed Dr. Robert W. Greenleaf especially to investigate, under its directions, all questions relating to public health; Messrs. Olmsted, Olmsted & Eliot to consider questions of an æsthetic nature; and Mr. F. P. Stearns, C.E., to aid it in dealing with whatever engineering problems might be involved. After a thorough and absolutely impartial investigation, this joint Board reported unanimously in favor of a general plan for beautifying and utilizing the river, the most salient feature of which was the construction of a dam near the present Craigie bridge. The report of this joint commission says (see page xii): —

We are fortunately, however, not without examples of basins quite similar to this, situated also in the midst of larger populations; and in the most conspicuous example, the world-renowned Alster basin, the water park of the city of Hamburg, there is no means of introducing any water beyond that flowing in the com-

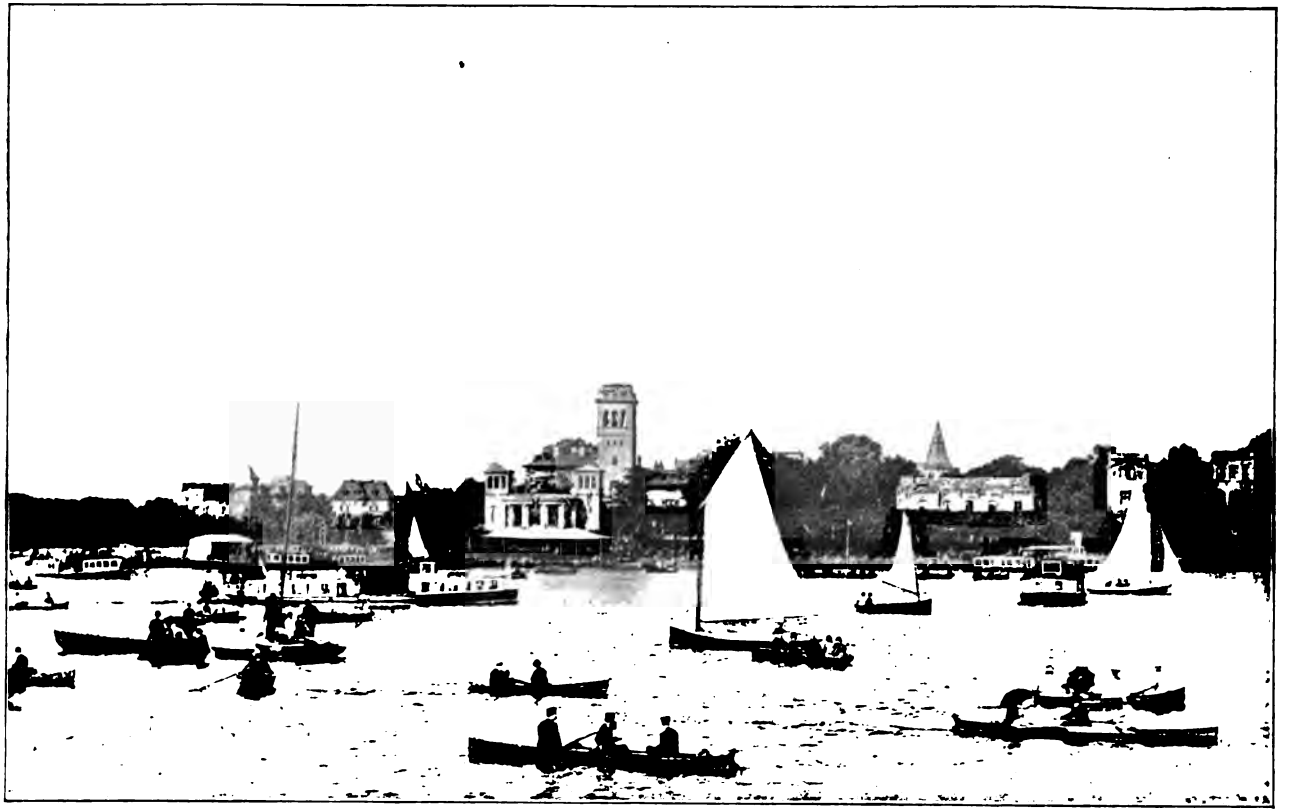
paratively insignificant Alster. The basin is very shallow and has a muddy bottom, but is surrounded by some of the best private houses of this flourishing and wealthy port, and the water surface of the basin and its shores constitute the most frequented places of resort in the city. During the terrible cholera epidemic of 1892, when Hamburg suffered, as few European cities ever have suffered, from this pestilence, the wards in which lie the Alster basins showed the lowest death rates in the city.

Speaking of the proposed dam recommended by the commission, their report says (page xi): —

Estimates have been made for a dam, to be one hundred feet in width; and there would thus be provided a foundation for another roadway into the city of Boston from East Cambridge and the country beyond, of permanent character. The landscape architect would also be able to connect this structure with the public lands on both banks of the river, by such additional fillings and roundings of corners as would materially increase the area of these grounds and add new features of attraction.

Unfortunately, however, this joint commission recommended that, to defray the expense of building the dam, a new row of houses should be built between the river and the houses now on the water side of Beacon Street. This quite naturally aroused the opposition of the residents on the north side of Beacon Street, and a large sum of money was raised to fight the plan. Eminent counsel were retained to appear before the Harbor and Land Commissioners, to whom the whole subject was then referred by the Legislature. The eminent counsel thus referred to were naturally adroit enough not to fight the plan simply on the ground that it would shut off the river view from the subscribers to the fund, but, in argument and by paid expert testimony, raised every objection their ingenuity could suggest, their chief arguments being: —

1. That the plan was prejudicial to health, as the proposed dam would create a fresh-water basin which would prove malarial.



A VIEW ON UPPER ALSTER BASIN — HAMBURG.

2. That a large body of salt water coming into the basin every day rendered the temperature at the back of their houses a matter of two or three degrees cooler.

3. That to dam the basin would lessen the flow of water back and forth in the harbor, and so tend to clog the channel.

4. That the lessened movement of water in the harbor would permit ice to form in the ship channel, and so clog the harbor.

Of course, so far as arguments 3 and 4 were concerned, the eminent counsel were not simply arguing points with which persons living on the water side of Beacon Street were especially concerned, but were frankly laying hold of anything which would serve to knock the projected improvement on the head, and so put a stop to the threatened row of houses.

We desire to state that the present plan for the improvement of the Charles River basin differs radically from the plan projected in 1894, and that, in our opinion, it is not open to any substantial objection, but ought to be favored by every public-minded citizen of Boston, whether living in one of the houses now looking out upon the river, or elsewhere.

The present plan differs radically from the scheme of 1894, because it does not contemplate the erection of a row of houses in the rear of the present houses on the river side of Beacon Street, but only the filling in of such narrow strip as may be necessary to substitute for the present unattractive alley and mud flats an esplanade, with such opportunity for a driveway, saddle path, foot path, and such limited amount of trees and shrubbery as the landscape gardener may find essential.

In the next place, the present plan also differs radically from the one proposed in 1894, because, instead of a permanent dam, which shall always keep the water fresh, it is proposed to so construct the dam as to permit the basin to be emptied and refilled every night, if necessary. We

understand that the lower Thames River, near London, formerly presented in many respects the same problem as the Charles; but that, since 1894, a folding dam has been constructed across the Thames at Richmond, which is so made that the mere movement of a hand-bar will set in operation mechanism which causes the whole dam to collapse or fold, so that the entire basin can be emptied and refilled just as though no dam existed. In like manner, folding dams have been constructed since 1894 at a number of places in the United States. For example, we give here (facing page 10) photographs of one of these dams built across the Ohio River, about fifty miles below Pittsburg. As the photographs show, whenever, because of ice or high water or for any other reason, it is desirable to dispense with the dam, it can be folded upon the bed of the river so as to permit the free egress of the water, just as though no dam existed.

So far as malaria is concerned, we have consulted several physicians who have made a special study of malaria, and we have been assured that there exists not the slightest danger on this point. It should be borne in mind, in this connection, that malaria has ceased to be the mystery it was in 1894. It has been clearly established since that date, by the researches and experiments of Angelo Celli and others, that malaria is a germ having a regular cycle of life, and only capable of being introduced into a human being by the agency of the malarial mosquito. Even if it were not proposed to permit the frequent access and egress of salt water to the basin by the use of a collapsible dam, or other engineering contrivance for effecting this purpose, the clean, dry edges, and the constant blowing of the wind and the movement of the waves, would effectually prevent the breeding of mosquitoes; but clearly the ability to empty the entire basin and fill it with salt water as often as may be desired removes the last element of doubt on this question.

In reference to this subject, we add at the end of this

A VIEW ON CHARLES RIVER BASIN — BOSTON.

UPPER ALSTER BASIN — HAMBURG.

article a short statement kindly prepared for us by Dr. Richard C. Cabot, who is recognized by the medical profession in Boston as one of the leading experts on this question. It may be well, also, to add that we have now asked, absolutely at random, some forty physicians living on the Back Bay to sign a petition advocating the construction of the proposed dam. Of these forty physicians, a large number have gone out of their way to say, in emphatic terms, that, in their opinion, the constant presence of such a large body of water in the heart of the city would be a great public benefit, conducive in many ways to the public health. Out of the whole forty only three have refused to sign the petition, and only a single doctor has expressed the opinion that such a dam might be prejudicial to health. It is no reflection upon the medical profession to say that at almost every stage of critical bodily health we act upon the advice of a physician, and submit to treatment which at least one doctor in forty would pronounce injudicious.

Another change which has taken place since 1894, and which has a direct bearing upon the proposed dam, is the construction of the metropolitan intercepting sewer, which has removed from the river all the sewage of Waltham, Watertown, Brighton, Newton and practically all the sewage of Boston, except the small amount emanating from the houses on the water side of Beacon Street.

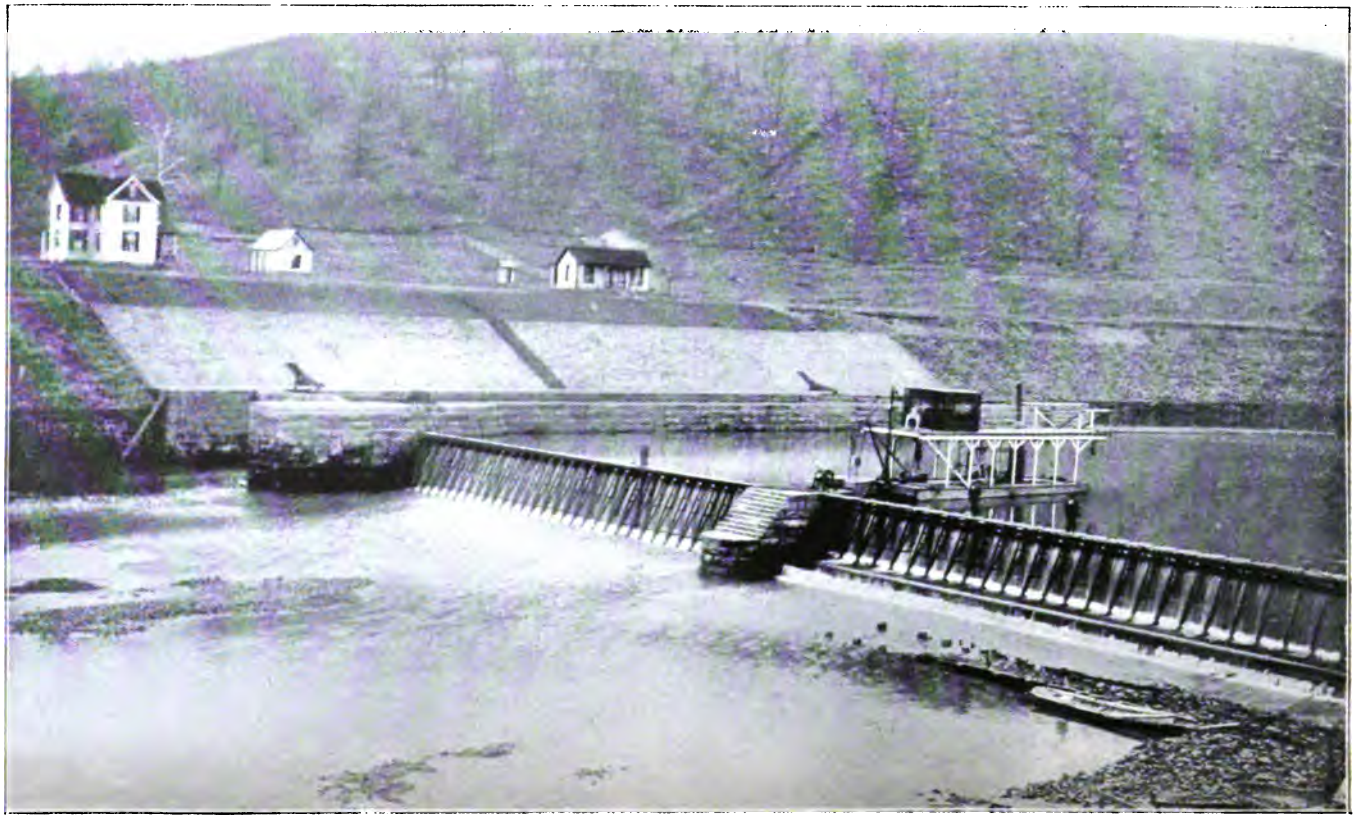
Moreover, since 1894 the Metropolitan Park Commissioners and the Cambridge and Boston park commissioners have taken practically all the wharves from the West Boston bridge to the Watertown dam; so that to-day, so far as we are aware, there is but a single wharf in the whole river, above the West Boston bridge, which is actually receiving freight by water; and this single wharf is located near the Boston & Albany Railroad, so that undoubtedly a very reasonable sum will suffice to compensate for the loss of any water rights which may be involved, — though, of course, if it seems more desirable, it is the simplest engineering matter to introduce a lock into the dam. Furthermore,

since 1894 Congress has effectually barred the passage up river of any sea-going craft, by authorizing a drawless bridge to take the place of the present West Boston bridge.

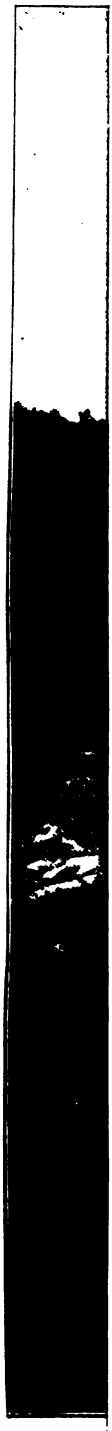
This committee has heard it argued by some people, against the plan of building a dam, that it would *raise* the level of the underground water in the Back Bay land, and so dampen the basements of the houses; and by others with equal earnestness that it would *lower* the level of the underground water, and so rot the piles under the foundations in this part of the city. The fact, however, obviously is that the water can be kept in the basin at a mean level somewhere between extreme high tide and low tide, which will maintain to a hair's breadth the present level of the underground water. The level of this underground water all over the filled-in land is accurately known by means of borings; and we believe it is clear that, if the basin is kept at an average height of a little over seven feet, it will just maintain the present level of the ground water. It may also be said that the proposed dam can be so constructed as to prevent the unwholesome flooding of the basements of many of the older Back Bay houses, which now occurs whenever there is an unusually high tide.

It also has been urged against this scheme that there is a certain amount of drainage which now goes into the river from the Back Bay Fens, Muddy River and certain residences on the north side of Beacon Street. But it seems to us that we should cease emptying any portion of our filth into what is naturally the most attractive open-air spot, located in the midst of the city, and that the same disposition should be made of this offending sewage that is now made of the remaining ninety-nine per cent. of the city's sewage.

It is believed that the unpleasant conditions arising from the present drainage from Stony Brook, Muddy River and the Beacon Street houses can be stopped by laying two or three short sections of sewer, one in the rear of the houses on the north side of Beacon Street, the other near the source of Stony Brook and Muddy River. It has been also urged



FOLDING DAM IN OHIO RIVER IN UPRIGHT POSITION.— HEIGHT OF DAM, 12 FEET



that, as a result of a particularly heavy rainfall, there is a storm overflow of sewage into the river from the sewers as at present constructed. We have competent engineering authority for the statement that this storm overflow can be accommodated in the sewers as at present constructed, and in any event we are advised that it need not occur more than three or four times a year; and, with the dam constructed as we propose, it will be perfectly easy to collapse the dam at times of heavy rainfall when the discharge from the sewers takes place; and so under no conditions of tide can we be worse off than at present. And we shall be much better off if the overflow occurs at low tide, for without the dam the sewage will simply be discharged upon the flats to be carried far up the river by the incoming tide, instead of being washed altogether out of the basin, as will be the case if the dam is collapsed simultaneously with the discharge of the sewage, so that the sewage, besides being at once diluted by the whole contents of the basin, also at once moves out towards the ocean with the water of the basin.

So far as the possible clogging of the harbor channel is concerned, by lessening the back-and-forth flow of water, it should be borne in mind that none of the streams emptying into Boston harbor are alluvial-bearing streams, bringing down substantial quantities of silt; but, on the contrary, the Mystic and Charles are practically free from sedimentary matter, and, moreover, the Charles, by means of the half a dozen dams between Newton Upper Falls and Watertown, is provided with a number of settling basins, which take out what little silt there may be in the river at Dedham; and that, in the proposition to add what at most can only be one more settling basin, there can be nothing which can radically affect the harbor. Furthermore, since 1894 the government has committed itself to the policy of dredging the harbor channel down to solid rock, which materially lessens, if it does not wholly do away with, the utility of the movement of the water over the floor of the harbor channel.

Certainly the effect of the proposed dam is almost insignificant in lessening the harbor current, when compared with the immense amount of filling which has already taken place around Boston, coupled with the great increase in depth and width of the present ship channel and the still further projected new channel through Broad Sound, which is to be much wider and deeper than the present channel. We believe it has been stated by eminent engineers that there has been no measurable shoaling of Boston harbor from the date of the earliest survey to the present time, notwithstanding the fact that the original area of Boston has been quadrupled, at the expense of the tidal flats appurtenant to the harbor. There seems to be no doubt that the channel in Boston harbor has reached the point where it depends for existence upon the steam dredge, and is practically unaffected by the comparatively weak natural currents of the harbor.

One reason for action at the present time is, that the Legislature has already directed the construction of a dam at or near St. Mary's Street, but it is felt that the placing of the dam at this point would be most unfortunate. There is no reason why the city of Boston should be deprived of the beauty and dignity to be obtained from the treatment of the whole basin on lines similar to the Alster basin at Hamburg; and there is no reason why every able-bodied boy should not have a chance, every fine winter's afternoon, to put on his skates at Charles Street, in practically the centre of the city, and skate in the fresh air and sunshine to his heart's content. There is no reason why, on a hot summer evening, hundreds or even thousands of people condemned to a summer in the crowded, unhealthy parts of the city should not obtain the recreation and health to be derived from a row or sail on a large body of water situated in immediate proximity to their homes.

So far as expense is concerned, no one contends that we ought to be contented with the present unsightly mud flats. The total cost of a dam with roadway was computed

in 1894 to be $660,000, while the mere dredging of the flats, which will be rendered unnecessary if the dam is built, has been estimated to cost $500,000; and it has been calculated that several times more than the difference between the $500,000 and the $660,000 can be saved by Boston and Cambridge in the treatment of the riverway park above the Cottage Farm bridge, if a dam is built, so that a gravel bank can be used instead of a stone wall with pile foundations, which must otherwise some day be constructed.

In conclusion, we beg to say that we propose to move very conservatively and slowly in this matter. We are not asking the present Legislature for any legislation on this subject, but only that the matter may be duly investigated by the proper authorities, with a view to bringing out all the facts and giving every one an opportunity to be heard, before any recommendation is made or legislation asked for.

HENRY L. HIGGINSON.
NATHAN MATTHEWS, JR.
AUGUSTUS HEMENWAY.
JOHN F. FITZGERALD.
GEORGE W. WELD.
JAMES J. STORROW.
GEORGE C. LORIMER, D.D.
ELBRIDGE G. CUTLER, M.D.
JOHN G. BLAKE, M.D.
EDW. H. BRADFORD, M.D.
SAMUEL F. HUBBARD,
Supt. North End Union.
EDWIN D. MEAD.
E. WINCHESTER DONALD, D.D.
WILLIAM BYRNE,
Vicar General.

STATEMENT BY DR. RICHARD C. CABOT.

It is now generally believed by physicians and biologists who have devoted study to the subject that malaria is transmitted to man solely through the bites of mosquitoes. Experimentally, malaria has been produced in perfectly healthy persons by exposing them to the bites of mosquitoes previously fed on the blood of persons infected with malaria, the type of disease so produced being always identical with that of the original case.

The malarial parasite has been demonstrated in the stomach wall and salivary glands of mosquitoes after they have bitten persons suffering from malaria.

Persons adequately protected against the bites of mosquitoes do not contract the disease. Two Englishmen passed the summer of 1900 in the most malarious part of the Roman Campagna, exposing themselves constantly to the damp night air, drinking water from springs in the vicinity, and endeavoring in every way to do what was popularly supposed to be most likely to produce malaria. The only precaution which they took was to protect themselves assiduously against mosquitoes. No sign of malaria showed itself in either of them, although many of the inhabitants of the houses close by were shaking with the disease at intervals throughout the summer.

Luckily for us, not all varieties of mosquitoes are capable of transmitting the malarial parasite to man. The members of the genus *Anopheles*, which is (so far as is known) the only genus to be feared in this respect, are not nearly so ubiquitous as the ordinary house mosquito (genus *Culex*). Whereas the latter has innumerable breeding-places under divers conditions, the malarial mosquito breeds only in stagnant, shallow pools; in deep or ruffled water it does not propagate. There is no evidence for believing that we can increase the amount of malaria in any locality by any changes that do not favor the production of small, shallow, stagnant pools. Ponds or lakes of fresh water do not tend to produce malaria unless their banks are shelving and overgrown with underbrush, so that the water can stagnate, unaffected by wind and waves, and so offer quiet breeding-places for the *Anopheles*.

RICHARD C. CABOT.